REMARKS

Claims 1-9, 16-22 and 54-76 are pending. This Amendment and Reply is filed in this application as a response to the Office Action, dated April 4, 2002, and the Notice of Allowability, dated May 17, 2002. Applicants appreciate the Examiner's indication that Claims 1-9 and 16-22 are allowable over the prior art. New Claims 54-76, which are based on previously canceled Claims 28-36 and 46-53, have been added to further define aspects of the present invention which Applicants believe are patentable. Applicants request that the Examiner consider the above amendments and the following remarks, and pass the application to allowance.

New Claims 54-76:

Claim 54 recites a method of producing a multilayer metal foil product. The method includes combining **a plurality of previously patterned** continuous metal foil layers to form an **advancing continuous stack of spaced apart metal foil layers**; scoring or creasing the advancing continuous stack of spaced apart metal foil layers across at least a portion of the width of the stack at predetermined intervals wherein the score or crease alternates in a left and a right direction; causing the continuous stack of spaced apart metal foil layers to fold in alternating directions at said scores or creases; and piling the alternately folding stack in a zigzag fashion to form a z-fold pack of the continuous stack spaced apart of metal foil layers.

Sheridan et al. (U.S. Patent No. 5,800,905) relates to a pad including thermal insulation and heat sink areas. The pad includes a plurality of layers of metal foil from a stack with the layers arranged one above the other. Sheridan et al., however, does not teach or suggest scoring or creasing the advancing stack of continuous metal foil layers. Rather, Sheridan et al. describes a manufacturing method for forming a laminate. As described in Sheridan et al., the laminate includes a layer of aluminum foil 21, an adhesive film 22, and a polyester of fiberglass non-woven mat which forms an aluminum foil-adhesive-insulating fiber mat laminate 42. The fiber mat laminate 42 is then combined with a heat retardant fiber mat layer to form a heat reflecting shield.

Wyrick (U.S. Patent No. 2,411,075) relates to a machine for aligning and folding continuous webs of material into a fan-folded pack. The invention is particularly adapted for use in autographic registers and superimposed continuous sheets which are used in printing machines and other similar recording apparatuses. The device includes a plurality of paper web supply rolls wherein the paper webs are drawn off from the supply rolls and over individual guide rolls, then in super-imposed engagement through a knurled gripper or a feed roll. The superimposed webs are then drawn through an intermittent slack-producing means which operates in synchronism with the web hinge aligning and creasing mechanism to guide the webs downward and fan-folded upon the counterbalanced platform or table member.

Wyrick, however, does not teach or suggest combining a plurality of previously patterned continuous metal foil layers to form an advancing continuous stack of spaced

apart metal foil layers. Rather, Wyrick describes that "the invention is adapted for fan-folding packs of superimposed continuous sheets or webs of material which are to be used in printing machines and other similar recording apparatus. The packs comprise multiple superimposed continuous sheets of **paper** having spaced printing forms therein." Col. 1, lines 10-16. (Emphasis added.) Accordingly, since Sheridan et al. in view of Wyrick does not teach or suggest combining a plurality of previously patterned continuous metal foil layers to form an advancing continuous stack of spaced apart metal foil layers, Claim 54 should be allowable.

In addition, there is no motivation or suggestion to modify Wyrick to include combining a plurality of previously patterned continuous metal foil layers to form an advancing continuous stack of spaced apart metal foil layers as recited in Claim 54. As set forth in Wyrick, "[t]he principal object of this invention is to provide a machine which will accurately align and fold a plurality of superimposed sheets of printed forms at their hinge joints, regardless of the slight variations in the distance between the hinges." Col. 1, lines 20-25. The web-feeding device of Wyrick "is adapted for fan-folding packs of contiuous sheets or webs of material which are used in printing machines and other similar recording apparatus. These packs comprise multiple superimposed continuous sheets of **paper** having spaced printing forms thereon." (Emphasis added.) Col. 1, lines 10-16. As suggested, the multiple sheets of paper are flat, such that there is no motivation to modify Wyrick to include an advancing continuous stack of spaced apart metal foil layers. Accordingly, Claim 54 should be allowable.

Claim 55 recites a method according to Claim 54 wherein the step of combining the plurality of previously patterned continuous metal foil layers comprises combining at least one previously patterned with at least one previously patterned metal foil layer to form the continuous stack of spaced apart metal foil layers.

Claims 56-58 recite the method of Claim 54, wherein the step of combining the plurality of previously patterned continuous metal foil layers comprises combining at least one patterned metal foil layer and at least one flat metal foil layer to form a continuous stack of metal foil layers; wherein the patter imparted to the stack of spaced apart metal foil layers is embossments or corrugations; and combining a fiber layer between two of the metal foil layers, respectively.

Claims 59-62 recite the method of Claim 54, wherein scoring or creasing is only at an edge of the continuous stack of spaced apart metal foil layers; wherein scoring or creasing is only at a plurality of points across the width of the continuous stack of spaced apart metal foil layers; and wherein scoring or creasing is only on a top layer of the continuous stack of spaced apart metal foil layers, respectively. Claims 55-62 which are dependent from Claim 54, and for the reasons set forth above as to Claim 54, Claims 55-62 should be allowable.

Claim 63 recites a method of producing a multilayer metal foil product. The method includes combining a plurality of continuous metal foil layers to form an advancing continuous stack and metal foil layers and **imparting a pattern** to all layers of the stack to

form an advancing stack of patterned and nested metal foil layers; **scoring or creasing** the advancing stack of patterned and nested foil layers across at least a portion of the width of the stack at predetermined intervals; causing the stack of patterned and nested metal foil layers to fold in alternating directions at said scores or creases; and piling the alternately folding stack in a zigzag fashion to form a z-fold pack of the stack of patterned and nested metal foil layers.

Sheridan et al., does not teach or suggest imparting a pattern to all layers of the stack to form a stack of patterned and nested metal foil layers. Rather, Sheridan describes a manufacturing method for forming a laminate. As described in Sheridan et al., the laminate includes a layer of aluminum foil 21, an adhesive film 22, and a polyester of fiberglass nonwoven mat which forms an aluminum foil-adhesive-insulating fiber mat laminate 42. The fiber mat laminate 42 is then combined with a heat retardant fiber mat layer.

Meanwhile, Wyrick also does not teach or suggest imparting a pattern to all layers of the stack to form a stack of patterned and nested metal foil layers, and scoring or creasing the advancing stack. Rather, Wyrick describes a mechanism which "[p]aper webs 6 are drawn off from the supply rolls B and over individual guide rolls 7a, thence in superimposed engagement through the knurled gripper or feed rolls 8 and 9." Col. 3, lines 45-51. The superimposed layers are then separated and then "drawn through an intermittent stack-producing means 17 which operates in synchronism with the web hinge

aligning and creasing mechanism," to guide the webs "downward and fan-folded upon the counterbalanced platform or table member 19." Col. 3, lines 64-69.

Accordingly, since Sheridan et al. in view of Wyrick does not teach or suggest imparting a pattern to the layers of the stack **and** then scoring or creasing the advancing stack, Claim 63 should be allowed.

Claims 64 - 66 recites the method according to Claim 63, wherein the pattern imparted to the stack of metal foil layers is embossments or corrugations; further comprising combining a fiber layer between two of the metal foil layers; and wherein the step of scoring or creasing is performed by rotating members having a respective male and female position, respectively.

Claims 64-66 are dependent from Claim 63 and should be allowable for the reasons set forth above.

Claim 67 recites a method of producing multilayer metal foil parts. The method includes feeding to a parts forming operation a continuous previously patterned multilayer stack of spaced apart metal foil layers from a z-fold pack of a continuous previously patterned multilayer stack of spaced apart metal foil layers, and forming and cutting individual multilayer metal foil parts from said stack of spaced apart metal foil layers.

As set forth above, Sheridan et al. relates to a pad including thermal insulation and heat sink areas. The pad includes a plurality of layers of metal foil from a stack with the

layers arranged one above the other. Sheridan et al., however, does not teach or suggest forming a z-folded pack of the continuous stack of spaced apart metal foil layers.

Keller relates to a method of production of books, pamphlets, magazines, periodicals, newspapers, folders and the like. In Keller, a continuous web of unprinted paper is processed whereby one side is printed, and then the opposite side is printed. The printed web is then fed into a truck in a zigzag fold. The trucks of printed material are then fed into an apparatus wherein "successive creases or folds H all come into register with each other"[1] to form a magazine, etc.

The combination of Sheridan et al. and Keller, however, does not teach or suggest the method of Claim 67, since Sheridan et al. in view of Keller does not teach or suggest feeding a continuous previously patterned multilayer of spaced apart metal foil layers from a z-fold pack to a parts forming operation. Accordingly, Claim 67 should be allowable.

In addition, there is no motivation or suggestion to modify Keller to include forming and cutting individual multilayer metal foil parts from the stack of spaced apart metal foil layers as recited in Claim 67. As set forth in Keller, a continuous web of unprinted **paper** is processed whereby one side is printed, and then the opposite side is printed. As suggested, the paper is flat, such that Keller does not provide any motivation to include feeding a continuously previously patterned multilayer of spaced apart metal foil layers from a z-fold pack to a parts forming operation. Accordingly, Claim 67 should be allowable.

---

[1] Page 3, lines 8-10.

Claims 68 and 69 recite the method according to Claim 67 wherein at least one of said metal foil layers is embossed or corrugated; and comprising at least one fiber layer, respectively. For the reasons set forth above as to Claim 67, Claims 68 and 69 should also be allowable.

Claims 70 and 71 recite a method according to Claim 67 wherein a draw of the continuous previously patterned multilayer stack of spaced apart metal foil layers from the z-fold stack is horizontal or non-vertical.

Cunningham et al. (U.S. Patent No. 4,218,962) relates to an apparatus for the formation of a thermal insulation blocks from rolls of fibrous blankets. A sheet of fibrous material from a roll is fed into the folding means of the apparatus to form the blocks of fibrous material. Thus, Cunningham et al. does not teach or suggest the drawing of a continuous previously patterned multilayer stack of spaced apart metal foil layers from a z-fold stack in a horizontal or non-vertical feed to a parts forming operation.

As set forth above, since none of the prior art cited teaches or suggests the method of producing multilayer metal foil part as recited in Claim 67 including drawing of the continuous multilayer metal foil from the z-fold stack in any other manner other than vertical, Claims 70 and 71 should be allowable.

Claim 72 recites a method of producing a multilayer metal foil product. The method includes combining a plurality of previously patterned continuous metal foil layers to form an advancing continuous stack of spaced apart metal foil layers; scoring or creasing

the advancing continuous stack of spaced apart metal foil layers across at least a portion of the width of the stack at predetermined intervals wherein the score or crease alternates in a left and a right direction, wherein the scoring or creasing is performed by a plurality of rotating members having a respective male and female positions, and wherein the rotating members are periodically activated and rotated one revolution at predetermined intervals to produce an alternating score or crease across the substantial width of the multilayer stack of spaced apart metal foil layers; causing the continuous stack of spaced apart metal foil layers to fold in alternating directions at said scores or creases; and piling the alternately folding stack in a zigzag fashion to form a z-fold pack of the continuous stack of spaced apart metal foil layers.

DE 198 03 837 relates to a device for folding a stream of material using rotating members having a male and a female positions. DE '837, however, does not teach or suggest scoring or creasing the material using rotating members which are periodically activated and rotated at one revolution at predetermined intervals. As shown in DE '837, the rotating members continuously rotate in order to impart a fold into the stream of material. If the members as disclosed in DE '837 rotated periodically, the stream of material would stop and start which result in a non-continuous stacking of material. Accordingly, since DE '837 does not teach or suggest a method of producing a multilayer metal foil product wherein rotating members are periodically activated and rotated one revolution at predetermined intervals to produce an alternating score or crease across the substantial width of the multilayer stack, Claim 72 should be allowable. Claims 73-76 are

dependent from Claim 72 and should be allowable for the reasons set forth above as to Claim 72.

CONCLUSION

Examination and allowance of the above-identified application are respectfully requested. In the event that there are any questions concerning this Amendment and Reply, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution may be expedited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: _____

Kirk M. Nuzum
Registration No. 38,983
Redwood Shores, California Office
(650) 622-2337

P.O. Box 1404
Alexandria, Virginia 22313-1404
(650) 622-2300

Date: August 16, 2002